FRESH AERO EasyLift System For Grumman AA-1 & AA-5 Series Aircraft

User Manual

The Steelebrook Group

Where Imagination Meets Innovation

The Fresh Aero EasyLift System
For Grumman
AA-1 & AA-5 Series Aircraft

Thank you for purchasing the Fresh Aero EasyLift System for AA-1 & AA-5 series Grumman aircraft. We're confident you will be pleased with this innovation in Grumman maintenance tools.

When it comes to lifting Grumman AA-1 & AA-5 aircraft, special requirements are needed to assure safe and damage free lifting.

For nose gear, wheel and tire servicing, current Grumman AA-1 & AA-5 series aircraft lifting procedures include placing sand bags or other weight on the top surface of the horizontal stabilizer to lower the tail section and consequently raise the nose. Recent evidence suggests that excessive loading of the horizontal stabilizer has contributed to stabilizer spar support fatigue and cracking. As a result, an Airworthiness Directive was issued by the FAA to address this issue.

The Fresh Aero EasyLift System was developed to completely eliminate loading the tail section and correctly places the lifting load precisely where Grumman maintenance manuals specify – at station 51, just aft of the firewall on AA-1 & AA-5 series aircraft.

The EasyLift System can also be used to lift each main gear & wheel assembly at station 125 without loading the strut. The load is spread out almost 4 feet along hard lifting points specified in Grumman maintenance manuals. This is very useful if the strut needs servicing.

Innovative features include:

- ✓ Eight ton heavy duty hydraulic jack coupled to a robust but lightweight aluminum support structure with an 18 inch footprint to enhance stability.
- ✓ Support structure ships diassembled for ecomomical shipping cost, yet takes just minutes to assemble.
- ✓ An articulating support beam that mates perfectly with the bottom of the aircraft and pivots to compensate for the increasing angle of incidence as the aircraft is raised. It lifts the aircraft at the locations specified in the Grumman manuals for excellent access when performing strut, wheel or tire maintenance.
- ✓ The support beam features a structural aluminum "C" channel core fastened to a treated wood sub plate and cushioned with a heavy duty wrap around carpet. The beam extends past the width of the aircraft with a large load lifting area – considerably more than required by Grumman service manuals.
- ✓ 1 3/8 inch diameter ram with an Acme threaded screw and collar for adjusting the crossbeam height prior to lifting.

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The Fresh Aero EasyLift System *continued* .....

✓ Locking collar on ram and Acme adjustment screw for additional safety

✓ Compact design. No bulky protuding structure to restrict maintenance procedures.

✓ Tool holders for jack pump handles and locking collar wrench are integrated with structure for easy and quick access to tooling

✓ Just minor assembly required! Just slide the vertical tube struture into the legs, insert/tighten one bolt, drop in the pivot adaptor and place the crossbeam on the pivot -- and you're ready to lift!

The Fresh Aero EasyLift System provides a stable and safe lifting environment for servicing Grumman AA-1 & AA-5 series aircraft gear & wheel assemblies. A combination of innovation, quality and intrinsic safety make the EasyLift one of the finest lift systems in the aviation market today and a superior solution for lifting Grumman AA-1 & AA-5 series aircraft. It doesn't get any easier than this!

The Fresh Aero EasyLift 3 year Limited Warranty

Fresh Aero Aviation makes every effort to provide high quality and durable products to the aviation community and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 3 years from the date of purchase. This warranty does not apply to damage due directly or indirectly to misuse, abuse, negligence or accidents; repairs or alterations outside our facilities; or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property or for incidental, contingent, special or consequential damages arising from the use of this product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation defect or problem must be included with the product. If inspection verifies the defect, we will either repair or replace the product at our discretion or may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return the repaired or replaced product at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then the purchaser must bear the cost of returning the product.

This warranty gives you specific rights and you may also have other rights which vary from state to state.

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Study and Save this Manual

Read this entire manual and all jack and lift labeling before using this lift system. Make sure you understand the instructions and safety precautions in this manual and also on the labels on your EasyLift. Failure to follow all the instructions in this manual can cause personal injury and aircraft and jack damage. Keep this manual and your invoice in a safe place for future reference. Do not use this lift system if you do not understand all the instructions and safety precautions in this manual. If this product is used without observing the information given under this symbol, injury or death may result.

Fresh Aero EasyLift System Safety Warnings and Precautions

Warning: *always adhere to the following safety precautions when using this lift system*

- Always keep the work area clean and well lit. Cluttered areas invite accidents and possible injuries.

- Stay alert and concentrate on safety. Be attentive to what you are doing. Do not use this lift when you are tired. A moment of inattention while operating tools and equipment may result in serious personal injury.

- Always wear ANSI approved safety goggles when using this lift and other tools and equipment.

- Never handle this lift if under the influence of alcohol, drugs or medications. Read warning labels on prescriptions you are taking to determine if your judgment or reflexes will be impaired while taking these drugs. Do not handle lift if any doubt exists.

- This lift system is heavy and requires bending when lifting and positioning under aircraft. Always use caution when handling this lift. Handle lift system by bending your knees, not your back. Improper lifting or use of this lift can cause personal injury and equipment damage.

- Always inspect entire lift system for damage, broken or loose parts and proper level of hydraulic fluid before each use (refer to page 17 of this manual for fluid level check procedure). Confirm that the screw at bottom of lift that secures the legs to the jack is tight . Check for alignment and binding of moving parts or any other condition that may affect proper operation. Do not use this lift system if any of these conditions exist and tag the EasyLift with a “Do Not Use” label until repaired. Repairs and replacements must always be performed by a qualified technician or the manufacturer. Service or maintenance performed by unqualified persons could result in injury.

The Fresh Aero EasyLift System
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Safety Warnings and Precautions - continued .....

- Always use this lift system for its intended application: lifting Grumman AA-1 & AA-5 series aircraft nose & main gear/wheel assemblies for servicing. This is a single purpose lifting system and must not be used for any purpose other than its intended application. The hydraulic jack used on this unit is modified to be used only on this system. Do not remove jack from system to use for other applications.

- Make certain that pivot adaptor is properly seated in the end of the Acme adjustment screw and that support beam (crossbeam) socket is seated on the pivot adaptor before sliding Easy Lift System under aircraft prior to lifting.

- Always locate aircraft and lift system on a hard, level, flat, dry concrete or asphalt surface before lifting aircraft. If, surface compresses when lifting aircraft, stop using this lift immediately and move aircraft to a surface that will support the weight of the aircraft.

- Locate jack at station 51 or 125 on aircraft as specified in Grumman maintenance manuals. Station 51 is located about 6 inches back from the firewall and extends about 12 inches aft. Station 125 is centered on edge of fuselage adjacent to the main gear being lifted. Refer to photos 3 and 4 for correct lifting area.

- For nose gear lifting, position support beam of EasyLift System parallel with the firewall and with ends of beam extended past fuselage an equal distance on both sides of aircraft. Keep beam clear of any antennas or other attachments on the aircraft.

- For main gear lifting, position crossbeam parallel with edge of aircraft fuselage. Crossbeam should protrude past the edge of fuselage about 1 inch for the entire length of crossbeam and the center of the beam should be centered with the landing gear being lifted (photo 4). Keep beam clear of any antennas or other protrusions at bottom of aircraft.

- Always keep hands away from pinch points along beam and base when lifting aircraft.

- Always remain clear of bottom of raised aircraft. Always verify that you and other people are not below any portion of raised aircraft.

- Use the bottom locking collar (photo 2) to backup the hydraulic jack for added safety. When aircraft is lifted to desired height, lock bottom collar with the supplied hex wrench, turning the screw clockwise until tight. Be sure to loosen lock collar before lowering aircraft.

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Safety Warnings and Precautions - continued .....

- Always chock both main tires of aircraft, both front and rear, immediately after lifting to desired height to prevent movement.

- If aircraft will remain lifted unattended for an extended period of time, be sure to block the aircraft's axle with wood or other load bearing material to serve as a secondary support system.

***Warning:* Never do any of the following when using the Easy Lift:**

- Do not drop or mishandle this lift system. Handle this unit carefully.

- Never alter or modify the design or structure of this lift system in any way.

- Never use the EasyLift System for any purpose other than lifting the nose and main gear of Grumman AA-1 & AA-5 aircraft at station 51 and 125 respectively. Refer to the Grumman maintenance manuals for the specific series being lifted and photos 3 & 4 in this manual). This is a single purpose lift and must not be used for any purpose other than its intended application. The hydraulic jack used on this unit is modified to be used only on this unit. Do not remove jack from the system to use for other applications.

- Never extend the range or capacity of the EasyLift System by using blocks, risers or other attachments under the base or above the support beam.

- Never use this lift on uneven, unleveled, soft or rocky surfaces. Base must lay flat and level with no rocking.

- Never use this lift on oily, wet or other slippery surfaces.

- Never use this lift on a surface that will not support the aircraft load or a surface that will cause the base of this lift to tilt or list.

- Never allow children in the work area. Do not allow children to handle or play with the Easy Lift System.

- Do not overreach. Keep proper footing and balance at all times.

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Safety Warnings and Precautions - continued .....

- Never place your body or any part of your body below the lifted aircraft or between any other pinch points. Also, make certain other people are clear of lifted aircraft.
- Never pull, push or lean on any part of lifted aircraft.
- Never climb on or into lifted aircraft. Also make certain other people stay off lifted aircraft.
- Never lift either main gear of aircraft when nose wheel or aircraft is lifted off surface.
- When lowering aircraft, do not open jack valve quickly (photo 2). Open very slowly and allow aircraft to slowly lower to ground level.
- To avoid damage to the EasyLift System and prevent personal injury, never place this product on a stand, chair, table or cart.
- To prevent personal injury, never sit or stand on this lift or support beam.

Warning: *The warnings, precautions and instructions discussed in this manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors that cannot be built into this lift system and must be supplied by the person or persons using this product. If you have questions regarding the performance, operation or maintenance of the EasyLift System, or just need another manual, please call or write the Fresh Aero Group at the at the contact numbers and e-mail address at the bottom of this page. Manuals are also available on our web site in PDF format.*

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Other Legal Notices

The Fresh Aero Aviation Group make no representations or warranties regarding any damages, injuries or benefit expected by using this unit lawfully, or any request from a third person, which are caused by the inappropriate use of this product.

Disclaimer of Warranty

The Fresh Aero Aviation Group makes no representations of warranties, either expressed or implied, by or concerning any content of these written materials and in no event shall be liable for any implied warranty for any consequential, incidental or indirect damages (including but not limited to damages for loss of business profits or business interruption) arising from the use or inability to use these written materials or equipment. No liability is assumed with respect to the use of the information contained in these written materials, or for damages resulting from the use of the information contained therein.

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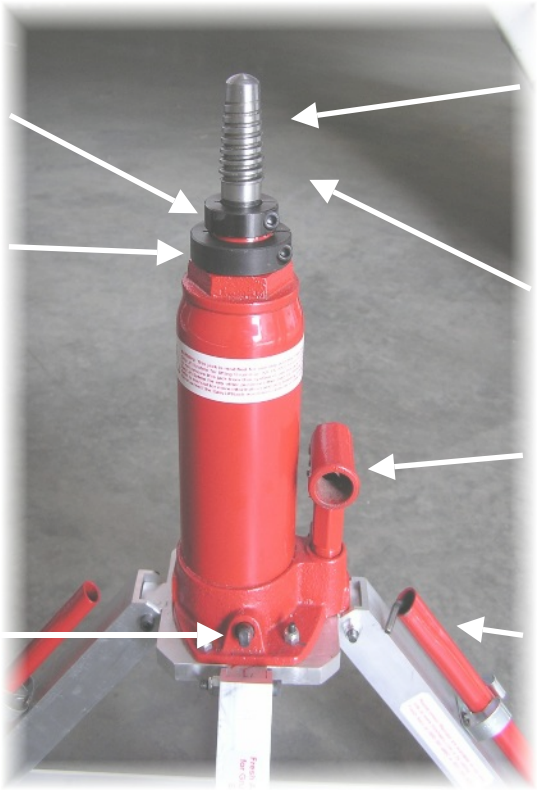
Operation Identification Photos

NOTE: These photos depict our previous style EasyLift with a diagonal base. The part nomenclature is the same, so just disregard the base style

Photo 1

Photo 2



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Operation Identification Photos - *continued .....*

NOTE: These photos depict our previous style EasyLift with a diagonal base. The lift locations are the same, so just disregard the base style

Photo 3

Station 51

Front edge of crossbeam about 6 inches from firewall

Photo 4

Station 125

Ram centered with gear strut and crossbeam carpet overlapping edge of fuselage approximately 1 inch

The Fresh Aero EasyLift System
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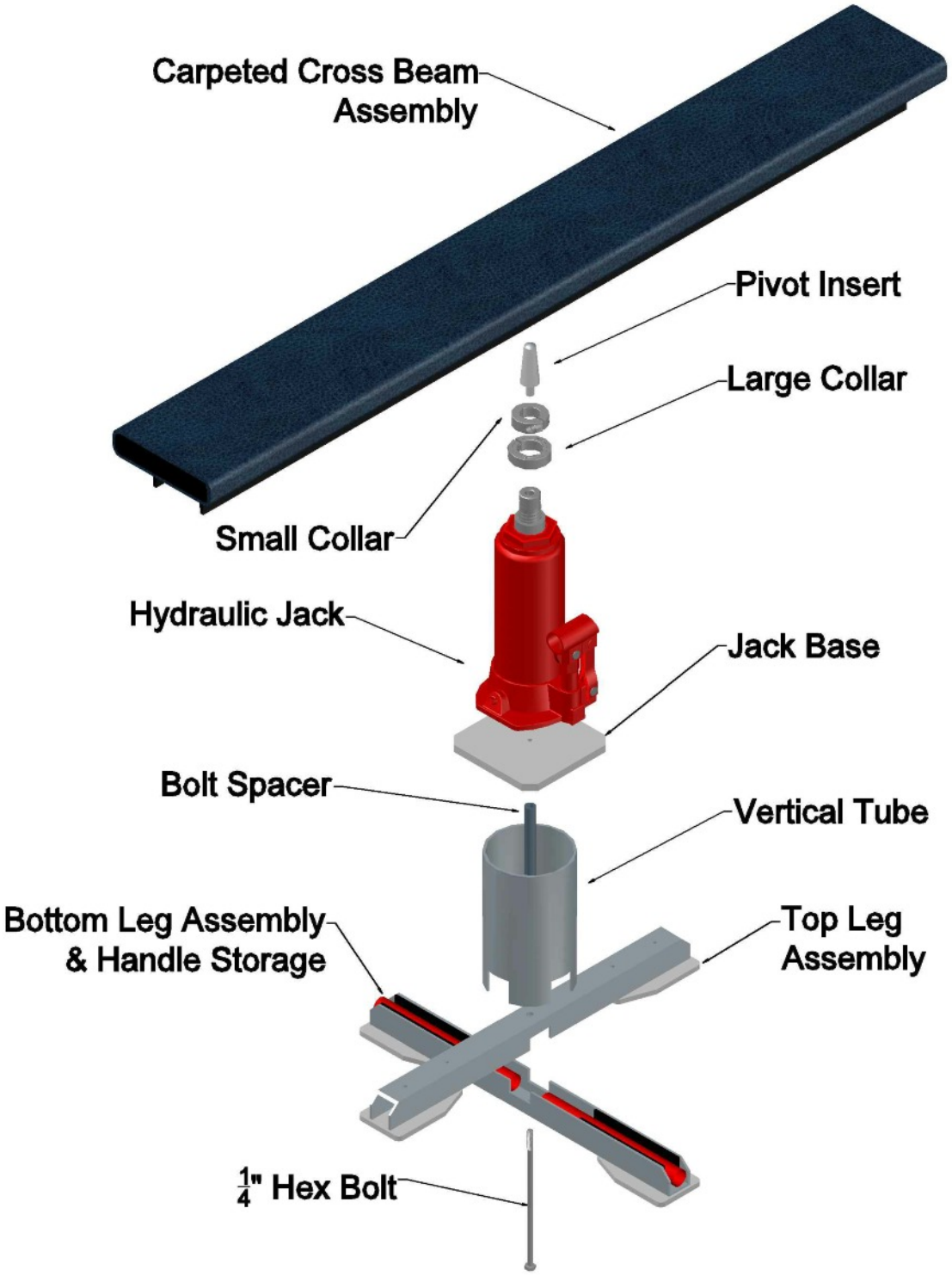
New Base Design



Easy Lift Assembly View

The Fresh Aero EasyLift System
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EasyLIft Assembly Procedure

Note: The EasyLift is shipped in two boxes. The smaller box contains the jack and most the parts and tooling needed for assembly. The long box contains the support beam and the cross base legs.

Another Note: We assemble and test every EasyLift, then disassemble for packing. The "witness marks" you may see on the parts reflect this. This is a new lift.

Tools needed for assembly:

7/16 inch socket or box wrench

Refer to the materials list and assembly drawing on page 11 for the following tasks:

1. Lay out and identify all the parts.

2. Assemble the cross base legs by aligning the center notches (notch to notch) and fit one leg into the other leg. Align the notches on the 4 inch diameter aluminum support tube with the leg sections and slide the tube on the legs. Note: the tube must be mounted on the opposite side the “pads” are on -- pads down, support tube up.

3. Slide the lock washer and then the large flat washer onto the 7 1/2 inch hex bolt. Hold the above assembly with the support tube horizontal and insert the bolt (with lock washer and flat washer) into the center hole from the "pad" side. Slide the 5/8inch diameter aluminum spacing tube onto the bolt.

4. Hold the jack assembly horizontally in one hand and start the above bolt into the hole at the bottom of the jack base. Continue to thread the bolt into the jack base to attach the jack to the support tube and legs. **Important:** confirm that the support tube edge seats in the groove in the bottom of the jack base. Use a 7/16 inch socket or box wrench to lightly tighten the bolt.

5. Align the front of the jack parallel with the jack handles in the leg channels (handles at each side) and tighten the hex bolt securely.

6. Refer to section 1 on the next page to mount the two locking collars and pivot adaptor.

That's it! You're ready to use your EasyLift!

Note: Be sure to carry the lift upright. The pivot adaptor and collars witll fall out if the lift is tipped.

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Easy Lift Operating Procedures

Read and understand all the proceeding safety precautions and warnings before using the Fresh Aero EasyLift

1. Preparing for lifting

1.1 Refer to the photos on the previous pages for the following procedures.

1.2 Locate the aircraft on a flat, level, dry and debris free surface.

1.3 Confirm that the pivot adaptor is properly inserted into the Acme adjustment screw at the top of the EasyLift with about 1/2 inch of screw showing. Confirm that both upper and lower collars are properly located. The lower collar should be loose on the jack ram and the upper collar loose on the exposed Acme screw. Lightly tighten upper collar to Acme screw using the included 3/16" hex wrench. This collar will be used as a handle to adjust the Acme screw. Position socket at bottom of the support beam over the pivot adaptor.

1.4 Before each use, always inspect entire lift system including support beam for damage, broken or loose parts. Make certain that the jack to plate screws and nuts are tight. Do not use this lift system if any of these conditions exist and tag the EasyLift with a "Do Not Use" label until repaired. Repairs and replacements must always be performed by qualified persons or the manufacturer. Service or maintenance performed by unqualified persons could result in injury.

2. Verify that jack ram is at lowest position

2.1 Remove small jack pump handle from tool holder (photo 2) and insert crushed end of handle onto jack valve (photo 2). Turn valve several turns counterclockwise to open valve and apply pressure to the top of cross beam to lower jack ram into jack. If ram does not lower, open valve several more turns and try again.

2.2 Confirm that the upper locking collar is resting on the lower collar or is in close proximity.

Warning: do not stand on support beam or use pressure that will cause you to lose your balance and fall.

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EasyLift Operating Procedures - *continued* .....

3. Positioning the EasyLift at Station 51 for nose gear lifting

3.1 Remove any debris from under aircraft at station 51 (photo 3) and slide entire lift system including crossbeam under aircraft at station 51 with crossbeam parallel with firewall. Take care not to impact antennas or other protrusions at bottom of aircraft.

WARNING: Never attempt to lift aircraft if antennas or other protrusions are between crossbeam and aircraft.

3.2 Position the EasyLift at the center of station 51 with jack pump socket (photo 2) facing out towards you. You will need to access this socket to pump the jack ram up. Make sure rear of nose wheel pant (if applicable) is between lift diagonal legs.

3.3 Hold and turn the upper collar counterclockwise to raise crossbeam loosely against bottom width of aircraft. Loosen upper collar, push it down against the jack ram and retighten.

Note: You may need to initially reach under the beam socket to grasp the collar.

3.4 Position crossbeam parallel with firewall with forward edge about 6 inches from firewall. Make sure crossbeam extends an equal distance beyond both sides of aircraft and does not interfere with the nose strut attach bolts extending back from firewall.

4. Lifting the nose gear

4.1 Chock rear of both main tires. Note: Aircraft will move forward slightly when lifted - this is normal. Do not chock front of main tires at this time.

4.2 Use the small jack pump handle to turn valve clockwise until tight (do not over-tighten). Slide the small handle into the larger handle and insert the large diameter handle into the pump socket. Pump up and down to raise jack ram and aircraft till the wheel/tire assembly is off the the surface.

WARNING: Stay clear of bottom of aircraft as aircraft is lifted and when aircraft is in the lifted position. Lift aircraft only high enough to perform intended maintenance.

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EasyLift Operating Procedures - *continued .....*

4.3 When aircraft is lifted, use the included 3/16" hex wrench to tighten the lower locking collar (turn clockwise)

4.4 Chock both front and rear of main tires and perform maintenance.

WARNING: Never risk pulling aircraft off lift by using excessive force when performing maintenance.

5. Lowering Aircraft

5.1 Confirm that all maintenance is properly completed and that all removed parts are properly installed on aircraft.

5.2 Loosen the lower locking collar (turn wrench counter-clockwise). Aircraft will not lower if this collar is locked.

5.3 Remove chocks from rear of tires if lowering the nose gear. Insert crushed end of small pump jack handle onto pump jack valve and turn valve counterclockwise very slowly until aircraft begins to lower. Stop turning valve and allow aircraft to slowly return to surface.

5.4 Turn upper locking collar to return the Acme adjustment screw to its minimum position. Support beam should now be clear of the aircraft. Loosen collar and slide it down.

Note: If the lift does not lower, confirm that the locking collars are loose on the Acme screw and jack ram. Then “jiggle” the aircraft wing very slightly to relieve any side loading on the ram that may be preventing the lift from lowering.

5.5 Confirm that entire weight of aircraft is on tires and not on jack or support beam. Slide the lift from under aircraft taking care not to impact antennas or other protrusions at bottom of aircraft. If moving aircraft, remove chocks from all tires.

5.6 Store jack and all components in a safe, secure and dry location. Remove support beam and store separately. Keep lift and support beam out of reach of children.

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EasyLift Operating Procedures – *continued .....*

6. Positioning the EasyLift at Station 125 for main wheel lifting

WARNING: Never lift more than one landing gear at a time with the EasyLift System. This product is not designed for multiple simultaneous gear lifting. Lifting more than one gear at a time with this lift can cause personal injury and aircraft and jack damage.

6.1 Remove any debris from under aircraft at station 125 (photo 6) and verify that the lift is at its lowest position (see page 13). Slide EasyLift including support beam under aircraft at station 125 with support beam parallel with edge of aircraft fuselage closest to gear being lifted (photo 4). Take care not to impact antennas or other protrusions at bottom of aircraft.

6.2 Position the EasyLift with jack pump socket (photo 2) facing out towards you. You will need to access this socket to pump the jack ram up.

6.3 Use the same procedure outlined on page 14 to adjust the Acme adjustment screw (you may need to slide your hand under the support beam socket). Turn the locked upper collar to raise the support beam against bottom of aircraft.

Note: You may need to initially reach under the beam socket to grasp the screw.

Support beam should protrude past the edge of fuselage about 1 inch for the entire length of crossbeam and the center of the beam should be centered with the landing gear being lifted (photo 6).

7. Lifting the main gear

7.1 Chock both front and rear of nose tire and main tire not being lifted

7.2 Use the lifting procedure outlined on page 14 to lift the main gear.

WARNING: Stay clear of bottom of aircraft as aircraft is lifted and when aircraft is in the lifted position. Lift aircraft only high enough to perform intended maintenance.

Warning: The next step is very important. As the aircraft is lifted, the center of gravity will shift to the opposite side, the opposite strut will flex and the EasyLift will "unload" on one end, unloading the base of the EasyLift on one side. To insure stability, you must perform the next step. This will compensate for the movement of the opposite strut.

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EasyLift Operating Procedures – c*ontinued .....*

7.3 ***Very Important*** – Slowly turn the jack valve with the pump handle to lower the lift away from the aircraft. Reposition the lift toward the un-lifted side to maintain the support beam 1 inch overlap on the fuselage as detailed in step 6.3. Repeat step 7.2.

7.4 When aircraft is lifted, use the "T" handle hex wrench to tighten the locking collar (turn clockwise)

WARNING: Never risk pulling aircraft off lift by using excessive force when performing maintenance.

8. Lowering Aircraft

8.1 Use lowering procedure outlined on page 15

General Care and Maintenance of your Easy Lift System

The Fresh Aero EasyLift System requires very little maintenance to keep it in excellent operating condition. However, like all mechanical devices, some preventive maintenance is necessary to maintain the integrity and inherent safety of this lift system. Please adhere to the following maintenance procedures to keep your EasyLift in excellent condition.

Lubricate all pump linkages with a high quality general purpose lubricant as needed. Apply general purpose grease to the Acme adjustment screw as needed.

Avoid exposing jack and entire lifting system to moisture. If system is exposed to moisture, wipe dry with a clean cloth and re-lubricate above components.

1. Checking for Proper Hydraulic Fluid Level

1.1 Locate the EasyLift on a flat, level and stable surface and face the front of the jack unit (where main ID and safety labels are located)

1.2 Completely lower the ram and remove the rubber oil fill plug on the upper left side of the jack unit by gently pulling and turning plug

1.3 Verify that hydraulic fluid is visible at the bottom of the fill hole. If fluid is not visible, add high quality hydraulic jack fluid with a pump type oil container inserted into fill hole until fluid is visible at the hole.

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EasyLift Operating Procedures – *Continued .....*

1.4 Purge air from the hydraulic system as described in the next section

2. **Purging Air from the Hydraulic System**

Occasionally, air can become trapped inside the hydraulic system of the jack unit and reduce the efficiency of the system. You can purge air from the hydraulic system using the following procedure:

2.1 Turn the jack valve (photo 2) one and ½ turns counterclockwise using the small jack handle

2.2 Remove the rubber oil fill plug on the upper left side of the jack unit by gently pulling and turning plug

2.3 Insert the large pump handle into the jack pump socket (photo 2) and rapidly pump the jack several times to purge the air

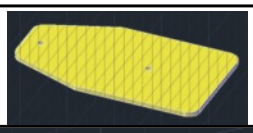
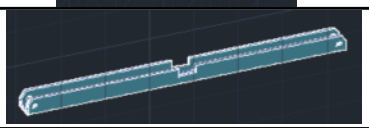
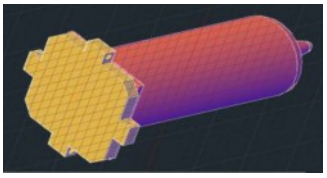
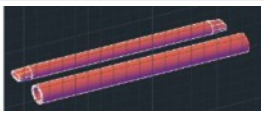
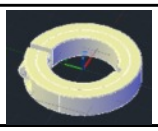
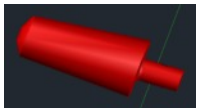
2.4 Turn the jack valve clockwise until snug using the handle

2.5 Replace the oil fill plug by pushing and turning plug into the fill hole until completely seated

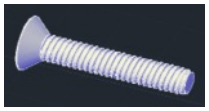
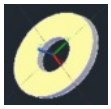
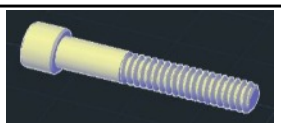
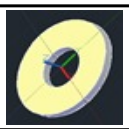
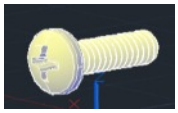
Fresh Aero EasyLift System for Grumman Specifications	
Lifting Capacity	2500 Pounds
Weight without Support Beam	18pounds
Support Beam Weight	12 Pounds
Support Beam Length	44 Inches
Support Beam Width	5.5 Inches
Acme Adjustment Travel	2.75 inches
Base Foot Print	20.5 Inches Square
Minimum Height with Beam	21.5 inches
Maximum Height with Beam	30.25 inches
Maximum Beam Articulation	25 degrees
Accessories:	
Pivot adaptor, Acme locking collar, ram locking collar, small & large pump handles, 1/8" hex wrench, 3/16" hex wrench	

Bill of Materials

Items pictured may not be the exact item shipped. Fresh Aero Aviation reserves the right to substitute.

Item	Description	Quantity	Illustration
1	Base Resting Pads	4	
2	Base Cross Member Bottom	1	
3	Base Cross Member Top	1	
4	Vertical Uprights	4	
5	Cylinder Base Plate Assembly	1	
6	Jack Cylinder Handle	1	
7	Handle Storage Clips	2	
8	Large Locking Collar	1	
9	Small Locking Collar	1	
10	Pivot Point Insert	1	
11	Cross Beam Assembly	1	
12	Allen Wrenches	2	
13	10-32 Flat Head Screws 5/8" Long	4	

Bill of Materials … continued

14	10-32 Flat Head Screws 1.5" Long	5	
15	10-32 Flat Washer	9	
16	10-32 Ny-Loc Hex Nut	9	
17	1/4-20 SHCS 1.5" Long	8	
18	1/4-20 Flat Washer	8	
19	1/4-20 Ny-Loc Hex Nut	8	
20	8-32 Pan Head Screw 1/2" Long	2	
21	8-32 Flat Washer	2	
21	8-32 Ny-Loc Hex Nut	2	

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